WHAT IS CLAIMED IS:

1. A method for calibrating a color image scanner, comprising:

    scanning a white region of a calibration chart;

    reading first data;

    converting the first data to first R.G.B. value;

    amplifying a maximum value in each pixel to a predetermined region;

    adjusting gain;

    scanning a color region of the calibration chart;

    reading second data;

    converting the second data to second R.G.B. value;

    summing and averaging;

    calculating averaged compensating value for scanning; and

    scanning and compensating.

2. The method as claimed in claim 1, wherein the first or second data is accessed by using a image sensor.

3. The method as claimed in claim 1, wherein the first or second data is converted to the first or second R.G.B. value by using an analog/digital converter (A/D converter).

4. The method as claimed in claim 1, wherein the pixel is represented by 8 bits and the maximum value is set within 250~255.

5. The method as claimed in claim 1, wherein the step of adjusting gain further comprises:

    checking if a current pixel value exceeds the maximum value;

subtracting an adjusted volume from a current gain value when the current pixel value exceeds the maximum value;

adding the adjusted volume to the current gain value when the current pixel value is smaller than or equal to the maximum value;

checking if a sensed pixel value is in the predetermined region, and

adjusting the adjusted volume according to difference between the maximum value and sensed pixel value.

6. The method as claimed in claim 1, wherein the step of calculating averaged compensating value is performed by using a relation between a sensing value (R, G, B) and a real value (r, g, b), the relation is:

$$R = a_{11} * r + a_{12} * g + a_{13} * b + c_1 \text{----------} (1)$$

$$G = a_{21} * r + a_{22} * g + a_{23} * b + c_2 \text{----------} (2)$$

$$B = a_{31} * r + a_{32} * g + a_{33} * b + c_3 \text{----------} (3)$$

wherein a_{ij} (i , j =1 , 2 , 3) are relative coefficients between the sensing value and real value, c_1, c_2, c_3 are minimum values of the sensing value.

7. The method as claimed in claim 6, wherein the equations (1)~(3) are expressed via matrices as following:

$$[R, G, B]^T = A\,[r, g, b]^T + C \text{----------} (4)$$

wherein matrices A and C are written as:

$$A=\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix} \quad C=\begin{bmatrix} c_1 \\ c_2 \\ c_3 \end{bmatrix}.$$

8. The method as claimed in claim 7, wherein the step of scanning and compensating is performed by using a reverse function of equation (4) as:

$$[r、g、b]^T=A^{-1}([R、G、B]^T-C)$$

whereby the real value (r, g, b) is obtained.